

Attorney's Docket No.: 12732-067001  
Client's Ref. No.: U35151

**OFFICIAL COMMUNICATION**

**FACSIMILE**

**FOR THE PERSONAL ATTENTION OF EXAMINER AHMED N. SEFER**

**U.S. PATENT AND TRADEMARK OFFICE (PATENT)**

**GROUP ART UNIT 2826**

**GROUP 2826 FAX NO: 703-746-4122**

Number of pages including this page 9

Applicant : Shingo Eguchi et al.  
Serial No. : 09/925,486  
Filed : August 10, 2001  
Title : Semiconductor Device

FACSIMILE COMMUNICATION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**MESSAGE:**

Further to our telephone conference, attached to this facsimile communication cover sheet is a copy of the office action that was mailed April 17, 2003. We look forward to receiving the replacement action.

John F. Hayden, Reg. No. 37,640  
Fish & Richardson P.C.  
1425 K Street, N.W., 11th Floor  
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40165092.doc

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## UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,486	08/10/2001	Shingo Eguchi	12732-067001	2842

26171 7590 04/17/2003

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EXAMINER

SEIFER, AHMED N

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Document	Response
Action	4-17-03
Due Date	7-17-03
Deadline	10-17-03
Initials	CMT
Record	

Document	Response
Action	4-17-03
Due Date	7-17-03
Deadline	10-17-03
Initials	CMT
Record	

<b>Office Action Summary</b>	Application No. 09/925,488	Applicant(s) EGUCHI ET AL	
	Examiner A. Sefer	Art Unit 2826	

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-27 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____                                    |

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**DETAILED ACTION*****Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in–

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Izawa  
US Patent No. 5,250,835.

Izawa discloses in fig. 1 a channel domain facing a gate electrode 25, 26 across insulation film 22 and a source/drain domain 17/18 connected to the channel domain 19, 20 that are formed on a semiconductor film formed on the surface of an insulating substrate, said gate electrode and said channel domain being divided plurally in the channel-length direction; a low-concentration domain 21, that is formed between the divided channel domains including a semiconductor film with low impurity concentration; and a low-concentration drain domain 32 that adjoins the channel domain located closest to a drain-domain side among said divided channel domains.

As to claim 2, Izawa discloses source domain 17 adjoining the channel domain is a high-concentration source domain.

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As to claim 3, Izawa discloses a channel-length-direction dimension of said low-concentration drain domain and the channel-length-direction dimension of the low-concentration domain located between said channel domains are substantially equal to each other.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Furata (EP 871 227).

Furata discloses in figs. 1 and 2 a channel domain facing a gate electrode 15 across insulation film 14a and a source/drain domain 13c connected to the channel domain 13a that are formed on a semiconductor film formed on the surface of an insulating substrate, said gate electrode and said channel domain being divided plurally in the channel-length direction; a low-concentration domain 13b, that is formed between the divided channel domains including a semiconductor film with low impurity concentration; and a low-concentration drain domain that adjoins the channel domain located closest to a drain-domain side among said divided channel domains.

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated Park US PG-Pub 2001/0028058.

Park discloses (see figs. 5 and 6 and page 3, par. 0035) a channel domain 51c facing a gate electrode 54, 53 across insulation film 52 and a source/drain domain 51a/b connected to the channel domain that are formed on a semiconductor film formed on the surface of an insulating substrate, said gate electrode and said channel domain being divided plurally in the channel-length direction; a low-concentration domain 56 that is formed between the divided channel domains including a semiconductor film with

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low impurity concentration; and a low-concentration drain domain that adjoins the channel domain located closest to a drain-domain side among said divided channel domains.

As to claim 2, Park discloses (see page 3, par. 0035) source domain 51a adjoining the channel domain is a high-concentration source domain.

As to claim 3, Park discloses a channel-length-direction dimension of said low-concentration drain domain and the channel-length-direction dimension of the low-concentration domain located between said channel domains are substantially equal to each other.

5. Claims 1, 3, 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated Yamazaki et al. PG-Pub 2001/0025958.

Yamazaki et al. discloses (see fig. 1-5 and page 6, par. 0107) a channel domain 108 facing a gate electrode 122 across insulation film 109 and a source/drain domain 139 connected to the channel domain that are formed on a semiconductor film formed on the surface of an insulating substrate, said gate electrode and said channel domain being divided plurally in the channel-length direction; a low-concentration domain 128 that is formed between the divided channel domains including a semiconductor film with low impurity concentration; and a low-concentration drain domain 128 that adjoins the channel domain located closest to a drain-domain side among said divided channel domains.

As to claim 3, Yamazaki et al. disclose a channel-length-direction dimension of said low-concentration drain domain and the channel-length-direction dimension of the

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low-concentration domain located between said channel domains are substantially equal to each other.

As to claims 6 and 7, Yamazaki et al. disclose an impurity concentration of a low-concentration domain and low-concentration drain domain which fall within the range recited in the claims.

As to claim 8, the device of claims 1-7 would necessarily have to be formed in order to function. Claim 8 fails to further limit the devices of claims 1-7 other than simply form each of their components.

***Allowable Subject Matter***

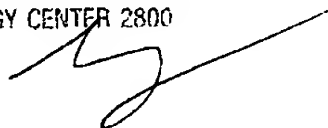
6. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 805-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

NATHAN J. FLYNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

ANS  
April 14, 2003



<b>Notice of References Cited</b>	Application/Control No. 09/925,486	Applicant(s)/Patent Under Reexamination EGUCHI ET AL.	
	Examiner A. Sefer	Art Unit 2826	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,392,255	05-2002	Shibata et al	257/59
	B	US-5,946,060	08-1999	Nishiki et al	349/48
	C	US-2001/0040656	11-2001	Na et al	349/110
	D	US-6,278,503	08-2001	Nishikawa et al	349/39
	E	US-5,734,177	03-1998	Sakamoto	257/49
	F	US-6,476,898	11-2002	Song et al	349/139
	G	US-2002/0044244	04-2002	Lee	349/141
	H	US-5,672,888	09-1997	Nakamura	257/72
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

## FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	EP 450 941	10-1991	European	Shimada et al	
	O	JP 7-28089	01-1995	Japan	Mizobata et al	
	P	JP 6-148678	05-1994	Japan	Kitawada et al	
	Q					
	R					
	S					
	T					

## NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



Sheet 1 of 1

Substitute Form PTO-1449 (Modified)  <b>Information Disclosure Statement by Applicant</b> (Use several sheets if necessary)  (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office		Attorney's Docket No. 12732-067001	Application No.
	Applicant Shingo Eguchi et al.			
	Filing Date August 10, 2001		Group Art Unit	

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 09/925486  
 06/10/01

U.S. Patent Documents							
Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
AS	AQ	S. Theiss et al.; International Electron Devices Meeting; San Francisco, CA; December 8-11, pp. 958-959; 1996
	AR	
	AS	
	AT	

Examiner Signature <i>AS</i>	Date Considered 4/11/03
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form (PTO-1449)